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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,685	04/26/2005	Takashi Saitoh	7412/84326	4377
42798 7590 05/31/2007 FITCH, EVEN, TABIN & FLANNERY P. O. BOX 18415 WASHINGTON, DC 20036			EXAMINER NGUYEN, TRI V	
			ART UNIT 1751	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,685

Applicant(s)

SAITOH, TAKASHI

Examiner

Tri V. Nguyen

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/28/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 2, 11-13 and 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-10 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/07, 02/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In the amendment filed on 02/28/07, none of the Claims were amended, cancelled or added and Claims 2, 11-13 and 15-21 were withdrawn from consideration. The currently pending claims considered below are Claims 1, 3-10¹⁴, and 22-25.

Applicant's arguments, see page 3 et seq., filed 02/28/07, with respect to the rejection(s) of claim(s) 1, 3-10 and 22-25 under 102 have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Glatkowski et al., Eikos, Inc., Mitsubishi Rayon Co LTD '739, Mitsubishi Rayon Co LTD '930, Blanchet-Fincher and Chen et al.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 2004/0266939).

Chen et al. disclose a composition with nanotubes, a conductive polymer such as polypyrrole which is soluble in water and a solvent (parag. 19 and claim 58).

The reference is anticipatory.

4. Claims 1,3, 5, 8 and 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Blanchet-Fincher et al. (US 2004/0021131).

Blanchet-Fincher et al. disclose a composition comprising a carbon nanotube, a solvent, a conducting polymer (e.g. polyaniline and polythiophene), a macromolecule (the high molecular

Art Unit: 1751

weight compound) and a surfactant (see at least abstract, parag. 12-17, 49-54 and example 34).

The composition is mixed using ultrasonication and coated on a substrate and the solvent is dried (see at least example 34). Regarding claim 8, the water soluble property is an inherent property of the recited conducting polymer.

The reference is anticipatory.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 5 and 22-25 are rejected under 103(a) as being unpatentable over Glatkowski et al. (US 2003/012111).

Glatkowski et al. disclose a composition obtained by mixing a polymer such as a conductive polymer with nanotubes and various additives such as a surfactant in a solvent followed by stirring and sonication. The resulting solution is casted as an electrically conductive film on a substrate and dried by imparting heat (claims 1 and 15; parag. 52-53, 61 and 88-89).

Although Glatkowski et al generally teaches the surfactant and conductive polymer features in their composition, the reference does not require the component(s) with sufficient specificity to constitute anticipation.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to have formulated a composition, as taught by Glatkowski et al, which contained a surfactant and a conductive polymer disclosed and taught by Glatkowski et al. therefore, one of ordinary skill in the art would have had a reasonable expectation of success, because such a composition containing a surfactant and a conductive polymer is expressly suggested by the Glatkowski et al disclosure and therefore is an obvious formulation.

7. Claims 1 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eikos, Inc. (WO 03/013199).

Eikos, Inc. discloses a composition comprising a solvent, a polymeric matrix such as a conductive polymer and carbon nanotubes (abstract, claims 1, 13 and page 10, lines 7-19). The composite obtained by mixing and sonication is applied as a coating to a substrate and dried to remove the solvent (page 11, lines 4-11 and page 17, lines 5-15).

Although Eikos, Inc. generally teaches the conductive polymer feature in its composition, the reference does not require the component(s) with sufficient specificity to constitute anticipation.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to have formulated a composition, as taught by Eikos, Inc., which contained the conductive polymer disclosed and taught by Eikos, Inc. therefore, one of ordinary skill in the art would have had a reasonable expectation of success, because such a composition containing a conductive polymer is expressly suggested by the Eikos, Inc. disclosure and therefore is an obvious formulation.

8. Claims 3-4, 9-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2002-140930, hereon referred to as Mitsubishi '930 – a machine translation is currently provided with the certified translation being performed).

Chen et al. disclose the composition of claim 1 but do not explicitly disclose the presence of a high molecular weight compound, a basic compound and a conducting polymer of formula (5).

Art Unit: 1751

In an analogous art, Mitsubishi '930 disclose a composition with the water-soluble conducting polymer of formula (5) (page 4), a high molecular weight component (page 7, parag. 28), a surfactant (page 8, parag. 31) and a basic compound (page 8, parag. 34).

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. Furthermore, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

9. Claims 4, 9-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al., Inc. as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2000-219739, hereon referred to as Mitsubishi '739 – a machine translation is currently provided with the certified translation being performed).

Chen et al., Inc. disclose the composition of claim 1 but do not explicitly disclose the presence of a basic compound and a conducting polymer of formula (5).

In an analogous art, Mitsubishi '739 disclose a composition with the water-soluble conducting polymer of formula (5) (page 6, parag. 29-30 and page 12, parag. 59) and a basic compound (page 9, parag. 39-40).

Art Unit: 1751

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

10. Claims 4, 9-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchet-Fincher as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2002-140930, hereon referred to as Mitsubishi '930 – a machine translation is currently provided with the certified translation being performed).

Blanchet-Fincher disclose the composition of claim 1 but do not explicitly disclose the presence of a high molecular weight compound, a basic compound and a conducting polymer of formula (5).

In an analogous art, Mitsubishi '930 disclose a composition with the water-soluble conducting polymer of formula (5) (page 4), a high molecular weight component (page 7, parag. 28), a surfactant (page 8, parag. 31) and a basic compound (page 8, parag. 34).

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. Furthermore, it is *prima facie*

Art Unit: 1751

obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

11. Claims 4, 9-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchet-Fincher, Inc. as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2000-219739, hereon referred to as Mitsubishi '739 – a machine translation is currently provided with the certified translation being performed).

Blanchet-Fincher, Inc. disclose the composition of claim 1 but do not explicitly disclose the presence of a basic compound and a conducting polymer of formula (5).

In an analogous art, Mitsubishi '739 disclose a composition with the water-soluble conducting polymer of formula (5) (page 6, parag. 29-30 and page 12, parag. 59) and a basic compound (page 9, parag. 39-40).

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Art Unit: 1751

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

12. Claims 3-4, 8-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski et al. or Eikos as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2002-140930, hereon referred to as Mitsubishi '930 – a machine translation is currently provided with the certified translation being performed).

Glatkowski et al. or Eikos disclose the composition of claim 1 but do not explicitly disclose the presence of a high molecular weight compound, a basic compound and a conducting polymer of formula (5).

In an analogous art, Mitsubishi '930 disclose a composition with the water-soluble conducting polymer of formula (5) (page 4), a high molecular weight component (page 7, parag. 28), a surfactant (page 8, parag. 31) and a basic compound (page 8, parag. 34).

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. Furthermore, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made

Art Unit: 1751

because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

13. Claims 4, 8-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski et al. or Eikos, Inc. as applied to the claims above, and further in view of Mitsubishi Rayon Co LTD (JP 2000-219739, hereon referred to as Mitsubishi '739 – a machine translation is currently provided with the certified translation being performed).

Glatkowski et al. or Eikos, Inc. disclose the composition of claim 1 but do not explicitly disclose the presence of a basic compound and a conducting polymer of formula (5).

In an analogous art, Mitsubishi '739 disclose a composition with the water-soluble conducting polymer of formula (5) (page 6, parag. 29-30 and page 12, parag. 59) and a basic compound (page 9, parag. 39-40).

It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Regarding claim 14, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In*

Art Unit: 1751

re Fessmann, 180 USPQ 324.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski Eikos, Inc., Blanchet-Ficher or Chen et al. as applied to claim 1 above, and further in view of Eikos, Inc. (WO 03/013199) and Search Report (Nguyen).

Glatkowski Eikos, Inc., Blanchet-Ficher or Chen et al. disclose the composition of claim 1 but do not explicitly disclose the inclusion of a silane coupling agent of formula (1).

In an analogous art, Eikos, Inc. discloses an electrically conductive composition with the compound of formula (5) (see table 2, page 19). The examiner notes that the search report is relied upon to indicate the structure of the silane present in the Eikos reference. It would be obvious to a skilled artisan to use a silane component to increase the dispersion of nanotubes in a polymeric matrix. Furthermore, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski Eikos, Inc., Blanchet-Ficher or Chen et al. as applied to claim 1 above, and further in view of Hsu (US 2004/0206942).

Glatkowski Eikos, Inc., Blanchet-Ficher or Chen et al. disclose the composition of claim 1 but do not explicitly disclose the inclusion of a colloidal silica component.

In an analogous art, Hsu discloses an electrically conductive composition with a colloidal component (page 5, parag. 71-72 and example 7, page 13). It would be obvious to a skilled artisan to use a silane component to control the rheology of the nanocomposite. Furthermore, it

Art Unit: 1751

is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose, see *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Response to Arguments

16. Applicant's arguments filed on 02/28/07 have been fully considered and they are persuasive with respect to the 102 rejection. The examiner notes that the claims are now rejected under both 102 and 103. Hereon is a response to applicants' arguments:

- a. Applicants argue that the Glatkowski et al. and Eikos references do not disclose a conducting polymer (page 4 et seq.). The examiner respectfully disagrees as the Glatkowski and Eikos references disclose the conducting polymer (see at least claim 15 in Glatkowski and claim 13 in Eikos).
- b. Applicants argue that the Mitsubishi '930 and '739 references do not teach nanotubes in the composition (page 5 et seq.). The examiner notes that the Glatkowski and Eikos references teach the feature of a conducting polymer but are silent as to the specific polymer. The Mitsubishi '930 and '739 references are then relied upon to teach the specific conducting polymer of formula (5). It would have been obvious to a chemical engineer to produce the claimed composition, as the references teach similar ingredients for the same utility. The examiner notes that claim 8 is directed to the polymer being water soluble not that the solvent is water. This feature is taught by the Mitsubishi '930 and '739 references which disclose the same polymer of formula (5) as the applicants thus it would be obvious that the both polymers have the same properties.
- c. Applicants argue about the citation of the Eikos and Nguyen references regarding claim 6 (page 9 et seq.). The examiner notes that the Eikos reference

Art Unit: 1751

indicates a composition with a silane compound in table 2 on page 19 and the Nguyen search report is relied upon to show the structure of the silane compound of formula (1) present in the Eikos reference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri V. Nguyen whose telephone number is (571) 272-6965. The examiner can normally be reached on M-F 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NVT

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May 24, 2007

Lorna M. Douyon
LORNA M. DOUYON
PRIMARY EXAMINER